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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/039,649	12/31/2001	Robert D. Cavin	42390.P13455	9235

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EXAMINER

LAMARRE, GUY J

ART UNIT

PAPER NUMBER

2133

DATE MAILED: 06/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/039,649

Applicant(s)

CAVIN, ROBERT D.

Examiner

Guy J. Lamarre, P.E.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-22 and 26-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-22 and 26-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

FINAL OFFICE ACTION

0. This office action is in response to Applicants' Amendment of 25 March 2004.
- 0.1 **Claims 1-16 and 23-25** are cancelled, **Claims 26-44** are added, **Claims 17-18 and 20-22** are amended. **Claims 17-22 and 26-44** remain pending.
- 0.2 The prior art rejections of record to the Claims are maintained in response to Applicants' **Amendment**.
- 0.3 The objections of record are withdrawn in response to Applicants' amendment.

Response to Arguments

- 1.0 Applicants' arguments of 25 March 2004 have been fully considered, but they are not persuasive.

REMARKS

1. There was a typo in Form 326 of paper # 5: no objections to the specification had been formulated.
- 1.1 In response to **Claim 17**, Applicants, on pages 10-11, allege that the prior art of record does not teach "transmission rate," but rather shorter packets to decrease packet interference probability.

Examiner disagrees as **HAARTSEN** discloses means to optimize data communications efficiency by making a nexus between *throughput* efficiencies with channel conditions, e.g., at page 18 paras. 1-2. Specific properties of packets are selected by varying encoding schemes, data packet lengths, or modulation. *Throughput* is defined as 'a measure of the data transfer rate through a typically complex communications system or of the data processing rate in a computer system.' *Microsoft Press Computer Dictionary*, 2nd Ed., 1993, at page 388.

Therefore, the **Examiner** maintains that the prior art of record renders unpatentable **Claim 17**.

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1.2 In response to **Claims 28-29, 36-37 and 43**, Applicants argue, on pages 11-12, that the prior art of record does not teach maintaining original packet length at increased rate.

Examiner disagrees as **HAARTSSEN** discloses means to optimize data communications efficiency by making a nexus between *throughput* efficiencies with channel conditions, e.g., at page 18 paras. 1-2. Specific properties of packets are selected by varying encoding schemes, data packet lengths, or modulation. *Throughput* is defined as 'a measure of the data transfer rate through a typically complex communications system or of the data processing rate in a computer system.' *Microsoft Press Computer Dictionary*, 2nd Ed., 1993, at page 388.

Therefore, the **Examiner** maintains that the prior art of record renders unpatentable **Claims 28-29, 36-37 and 43**.

Claim Objections

2. In the Claims: Information in brackets has no patentable weight and 'operable" in Claim 19 shall be replaced with 'configured to operate.' Claim 19 shall end in a period; 'DSSS' shall be spelled out and not abbreviates in the independent claims, e.g., claims 29 and 43. Appropriate correction is required.

Claim Rejections - 35 USC ' 102

3.1 **Claims 17-22 and 26-44** are rejected under 35 U.S.C. 102 (a) and (e) as being anticipated by **HAARTSSEN ET AL.** (WO 01 99384; published 27 Dec. 2001; filed 20 June 2000).

As per Claims 17-22 and 26-44, HAARTSSEN discloses a data processing system, e.g., ad hoc or wireless network or Bluetooth TM (page 1 last para.) or 802.11 (b) device that dynamically selects packet type, such as packet lengths, or error encoding procedures, based on channel conditions or characteristics, such as packet error rate (PER) in Tables 1-2. Fig. 5 depicts hardware implementation thereof wherein channel conditions are evaluated and selection is made based on comparison of said channel condition evaluation and some preset threshold. Noise abatement means, such as interference avoidance (e.g., FHSS or non-FHSS) and suppression

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(e.g., DSSS), are described, e.g., on page 2 para. 3 - page 3 para. 2.

HAARTSSEN further discloses means to optimize data communications efficiency by making a nexus between throughput efficiencies with channel conditions, e.g., at page 18 paras. 1-2. Specific properties of packets are selected by varying encoding schemes, data packet lengths, or modulation.

HAARTSSEN discloses the claimed means comprising: receiving (numeral 56) a data packet through a wireless channel; evaluating (numeral 52) quality of said wireless channel; calculating a packet error ratio (PER) value for said data packet; checking whether said PER value (numeral 52) is within an acceptable level; and determining whether an intermittent noise is affecting said PER value on page 2 para. 3 - page 3 para. 2.

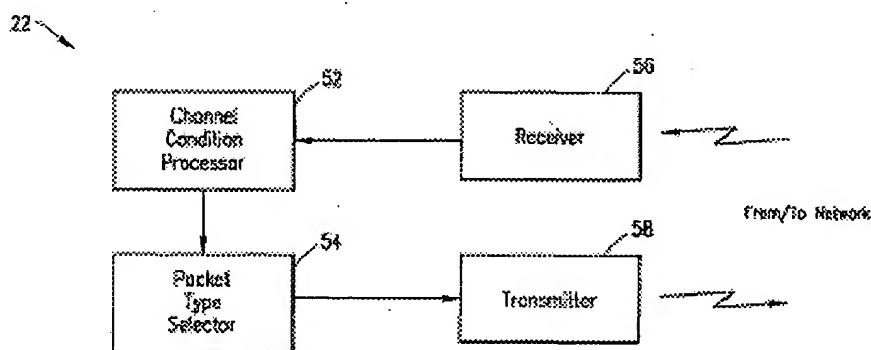


FIG. 5

HAARTSSEN discloses the claimed means further comprising determining whether said intermittent noise is due to a frequency hopping spread spectrum (FHSS) wireless device on page 2 para. 3 - page 3 para. 2.

HAARTSSEN discloses the claimed means wherein said data packet is wirelessly transmitted from a first wireless device to a second wireless device at a bit rate, said first and second wireless devices both compatible to a common wireless protocol on page 2 para. 3 - page

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3 para. 2.

HAARTSSEN discloses the claimed means further comprising stepping up said bit rate at which said data packet is transmitted if said PER value is less than a raise rate threshold on page 2 para. 3 - page 3 para. 2.

HAARTSSEN discloses the claimed means further comprising stepping down said bit rate at which said data packet is transmitted if said PER value is greater than a drop rate threshold on page 2 para. 3 - page 3 para. 2.

HAARTSSEN discloses the claimed means further comprising stepping down said bit rate if said intermittent noise is caused by a non-FHSS or constant interference source on page 2 para. 3 - page 3 para. 2.

HAARTSSEN discloses the claimed means further comprising propagating against said data rate to said second wireless device in Fig.5.

HAARTSSEN discloses the claimed means wherein said FHSS wireless device is a Bluetooth device in para. 1 of page 14.

HAARTSSEN discloses the claimed means wherein said data packet is received at an 802.11 (b) device in para. 1 of page 14.

HAARTSSEN discloses the claimed means comprising: evaluating (numeral 52) a data packet for any error; checking whether said data packet includes a packet error; calculating (numeral 52) a packet error ratio (PER) for said data packet; and raising data rate setting at which subsequent data packet are transmitted if no packet error exists and said PER is less than a raise rate threshold in Tables 1-2 wherein means are provided for adjusting plural packet characteristics based on channel conditions.

HAARTSSEN discloses the claimed means further comprising backing off said data rate if an error exists and said PER value is greater than a drop rate threshold in Tables 1-2 wherein

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means are provided for adjusting plural packet characteristics based on channel conditions.

HAARTSSEN discloses the claimed means further comprising stepping down said data rate if an intermittent noise from a non-FHSS or constant interference source causes a packet error in Tables 1-2 wherein means are provided for adjusting plural packet characteristics based on channel conditions.

HAARTSSEN discloses the claimed means further comprising: generating a signal strength value and saving said value in a memory location; and evaluating a value for said data packet, wherein said data rate is increased if an average signal strength value based on prior data packets is above a signal strength raise rate threshold in Tables 1-2 wherein means are provided for adjusting plural packet characteristics based on channel conditions.

HAARTSSEN discloses the claimed means comprising determining whether said packet error is due to intermittent interference on page 2 para. 3 - page 3 para. 2.

HAARTSSEN discloses the claimed means wherein said intermittent interference is caused from a frequency hopping spread spectrum (FHSS) device on page 2 para. 3 - page 3 para. 2.

HAARTSSEN discloses the claimed means further comprising stepping down said data rate if said interference is not caused by said FHSS device on page 2 para. 3 - page 3 para. 2.

HAARTSSEN discloses the claimed means comprising: a wireless transceiver (Fig. 5: numeral 56) to send and receive (Fig. 5: numeral 56) a data packet via wireless communications; a network interface card coupled to said wireless transceiver, said network interface card to connect to another wireless device to form a wireless local area network; and firmware comprising control logic to calculate (Fig. 5: numeral 52) a packet error ratio (PER) value for said data packet, check (Fig. 5: numeral 52) whether said PER value is within an acceptable level, determine whether an intermittent noise is affecting said PER value, step up data transfer

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rate at which said data packet is transmitted if said PER value is less than a raise rate threshold in Tables 1-2 wherein means are provided for adjusting plural packet characteristics based on channel conditions and said intermittent noise is due to a frequency hopping spread spectrum (FHSS) device on page 2 para. 3 - page 3 para. 2.

HAARTSSEN discloses the claimed means wherein said control logic is to further determine whether said intermittent noise is due to said FHSS wireless device on page 2 para. 3 - page 3 para. 2.

HAARTSSEN discloses the claimed means wherein said FHSS wireless device is a Bluetooth device in para. 1 of page 14.

HAARTSSEN discloses the claimed means wherein said apparatus is an 802.11 (b) protocol compatible wireless device in para. 1 of page 14.

HAARTSSEN discloses the claimed means wherein said control logic is to further step down said bit rate at which said data packet is transmitted if said PER value is greater than a drop rate threshold in Tables 1-2 wherein means are provided for adjusting plural packet characteristics based on channel conditions.

HAARTSSEN discloses the claimed means wherein said control logic is to further step down said bit rate if said intermittent noise is caused by a non-FHSS source in Tables 1-2 wherein means are provided for adjusting plural packet characteristics based on channel conditions.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Reynolds et al. (PG Pub# US 2004/0045030) teaches that " *The software agent also reports certain relevant information to the system of the characteristics of the communication channel between*

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the terminal and the server. Such information includes, without limitation: latency, bandwidth, and signal path integrity. Based upon terminal device configuration and real time updates of channel characteristics and capabilities, the system actively manages transmission of the compressed data stream by varying parameters such as buffer length, transmitted bit rate, and error correction. The system also feeds operating conditions to the compression system to dynamically alter encoding and compression settings to optimize delivery of the data. The delivery software agent resident on the terminal device decompresses the data stream that is composed of segment-by-segment variations in compression/decompression algorithm and settings thereof. Dependent upon the terminal device configuration, and especially for very thin clients, instructions may be refreshed on a segment-by-segment basis for each decompression algorithm and encoding setting combination. Instructions for decompressing may also be kept resident if appropriate to the terminal device."

4.0 THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action

4.1 Any response to this action should be mailed to:

Commissioner of Patents and Trademarks, Washington, D.C. 20231

or faxed to: (703) 872-9306 for all formal communications.

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Fourth Floor (Receptionist).

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guy J. Lamarre, P.E., whose telephone number is (703) 305-0755. The examiner can normally be reached on Monday to Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert De Cady, can be reached on (703) 305-9595.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Information regarding the status of an application may also be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Guy J. Lamarre, P.E
Primary Examiner
6/14/04
